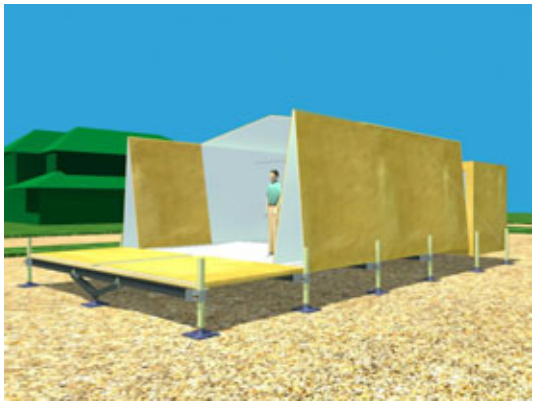
High Expansion Ratio Shelter

What It Is:

From soldier billeting to dining hall, from hospital ward to exercise room…all of these field needs will be met with a 20- by 96-foot shelter called the High Expansion Ratio Shelter.

Why It's Needed:

Soldiers deployed in Bosnia lived for many months in the Tent, Personnel Modular (TEMPER). The tents provided little insulation in cold weather, so the troops added raised wood floors, additional walls inside the tent, and even some wooden entrance doors. Made of rigid panels, the High Expansion Ratio Shelter will house soldiers more comfortably than tents during long-term deployments.



How It Works:

The High Expansion Ratio Shelter travels in an 8 by 8 by 20-foot container. "High expansion ratio" means it expands 12:1 to make the 20 by 96-foot shelter. All the parts-panels, beams, jacks, and lights-that make up the shelter fit inside the container for shipment and storage.

Thirteen modules — each made up of five hinged panels — are built off the container one at a time. A folding framework supports the peaked roof.

Each rigid panel is a composite with a foam core and a fiberglass skin. The shelter is very stable and much quieter than tent fabric in windy conditions, and a hinged door lets soldiers enter and exit more easily.

We plan to complete the first prototype High Expansion Ration Shelter by June 2001.

Benefits:

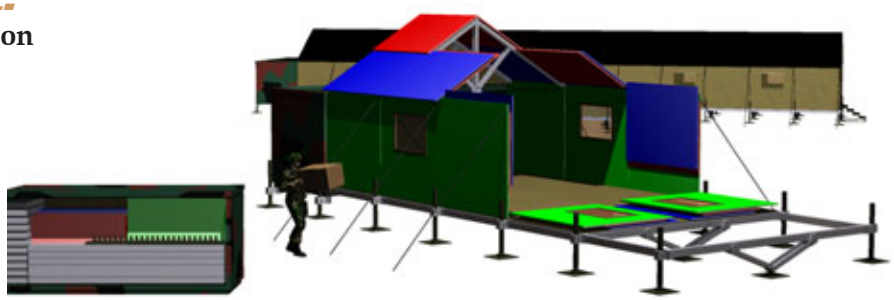
Light and Durable Design…Compared to today's panels made of honeycomb cores and aluminum skin, the shelter's composite panels will increase thermal insulation by 50%, reduce panel thickness by 20%, and reduce panel weight by 20%.

Lower Cost…The composite panels are fabricated by "pultrusion", a continuous process that greatly reduces labor costs and lowers the shelter cost by 50%.

Comfortable Quarters…The insulated walls and floor make the shelter easier and more efficient to heat and cool.

Point of Contact:

Collective Protection Liaison
Phone: 508-233-4347



Packed Footprint: 8'×20'

Deployed: 20'×96'

Latest Version

U.S. Army
Soldier and Biological Chemical Command

Soldier Systems Center
Kansas Street
Natick, Massachusetts
01760
www.sbccom.army.mil

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